

Southeast Coast Network Water Quality Monitoring



Coastal Water Quality Monitoring

it all started with...

- Watershed Condition Assessments funded by WRD
(Completed November '04 – May '06)
- Scoping Meeting (June, 2005)

Key Conclusions:

- Need a combination of continuous monitoring of management driven sites and area-wide condition assessments.
- Don't re-invent the wheel! Protocols, costs, data management already figured out.
- Collaboration isn't happening as much as it could be.
- Parameter recommendations based on regional expertise.
- Management relevance of the data varies from park to park. Defined through the Coastal Watershed Condition Assessments.

Protocols:

Probabilistic Surveys – Following Protocols Developed by the US Environmental Protection Agency. CESU Agreement with UGA.

30 Randomly selected stations (5-year rotating basis)

- Hydrographic Profile (pH, DO, Temperature, Salinity)
- Secchi Depth
- Total Dissolved Nitrogen
- Total Dissolved Phosphorus
- Chlorophyll a
- *Sediment Chemistry, Total Organic Carbon & Grain Size

* Sediments sampled every 10 years

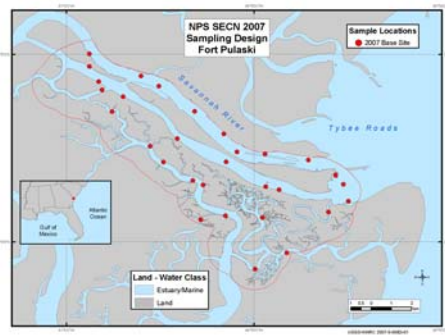
Cumberland Island National Seashore

Survey July 2007



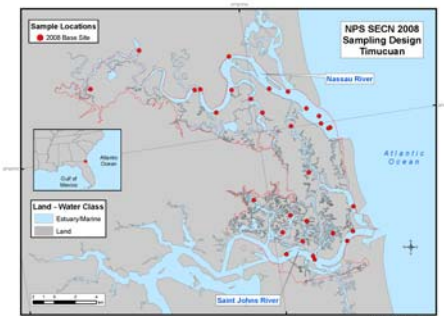
Fort Pulaski National Monument

Survey August 2007



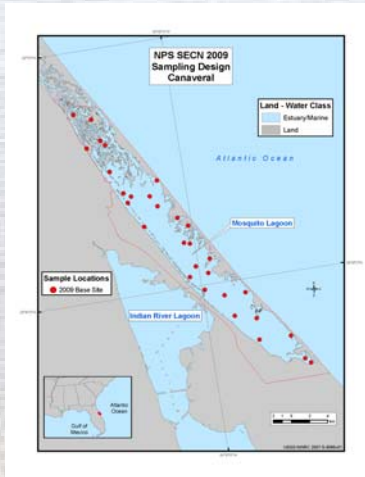
Timucuan Ecological and Historic Preserve

Survey Scheduled for 2008



Canaveral National Seashore

Survey Scheduled for 2009



Cape Hatteras and Cape Lookout National Seashores

Survey Scheduled for 2010



Protocols:

Fixed Site – Following Protocols Developed by the National Estuarine Research Reserve Program.

Datalogger (every ½ hour)

- pH
- Dissolved Oxygen
- Temperature
- Salinity
- Turbidity
- Depth

Monthly

- Total Dissolved Nitrogen
- Total Dissolved Phosphorus
- Chlorophyll a
- Secchi Depth



Implemented Differently at each Park

- Number of Fixed sites Varies (1-3).
- Maintenance and Management of Fixed Sites Varies with Local **Ability, Expertise, Interest & Staff**.
- Monthly Sampling Varies Depending on Partners and Existing Data.

Canaveral National Seashore

Site established:
July 2005

- Have had some data gaps along the way.
- SECN Staff currently maintaining this site.
- Working on a partnership with Volusia County to maintain fixed site.



Canaveral National Seashore

- Monthly samples taken by St. John River Water Management District.
- SECN will exchange data with SJRWMD.



Cumberland Island National Seashore

Site 1 established:

August 2005

Site 2 established:

January 2007

Nutrient and Chlorophyll
started February 2007

- Park staff maintaining these sites.



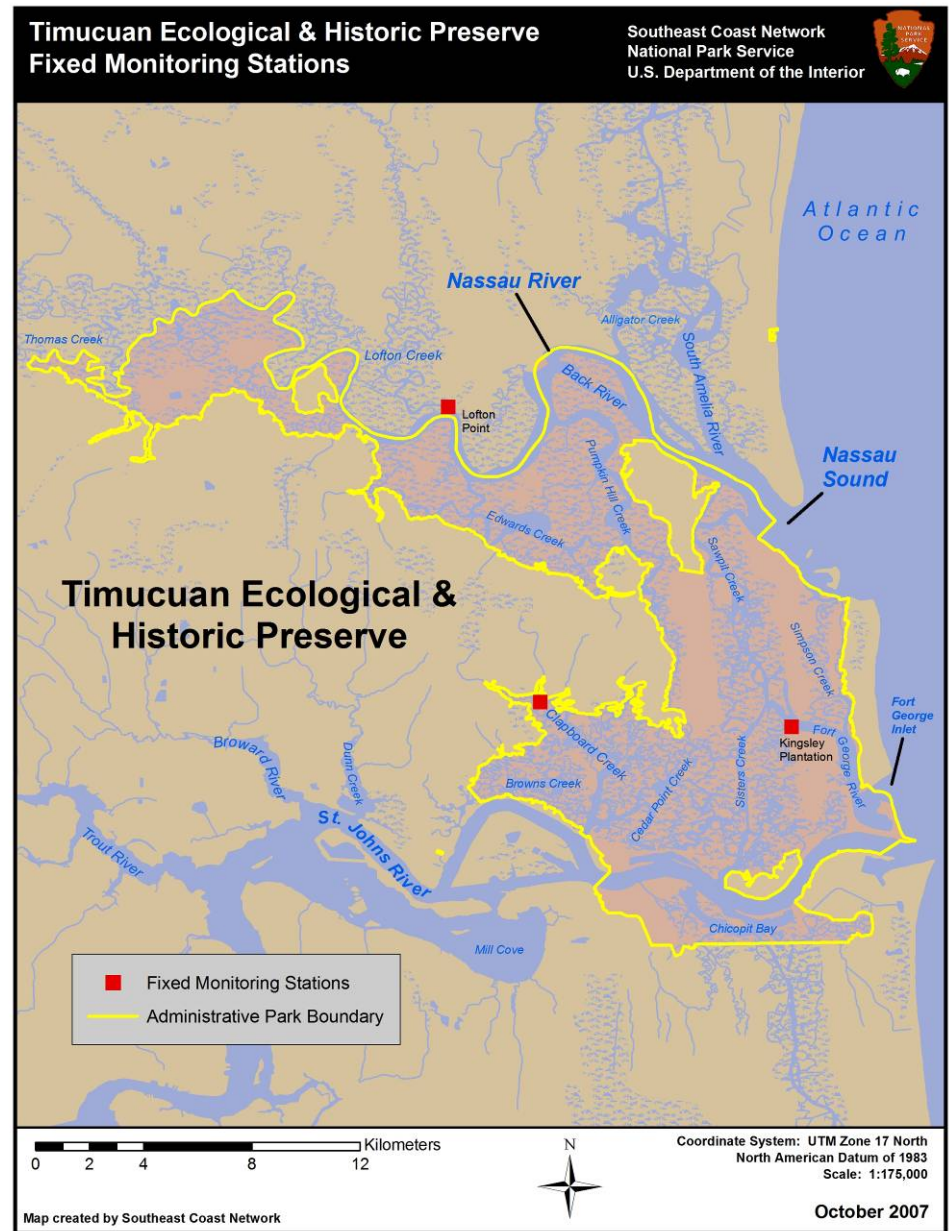
Timucuan Ecological and Historic Preserve

- Establishment of sites:

Kingsley Plantation March '04

Clapboard Creek September '04

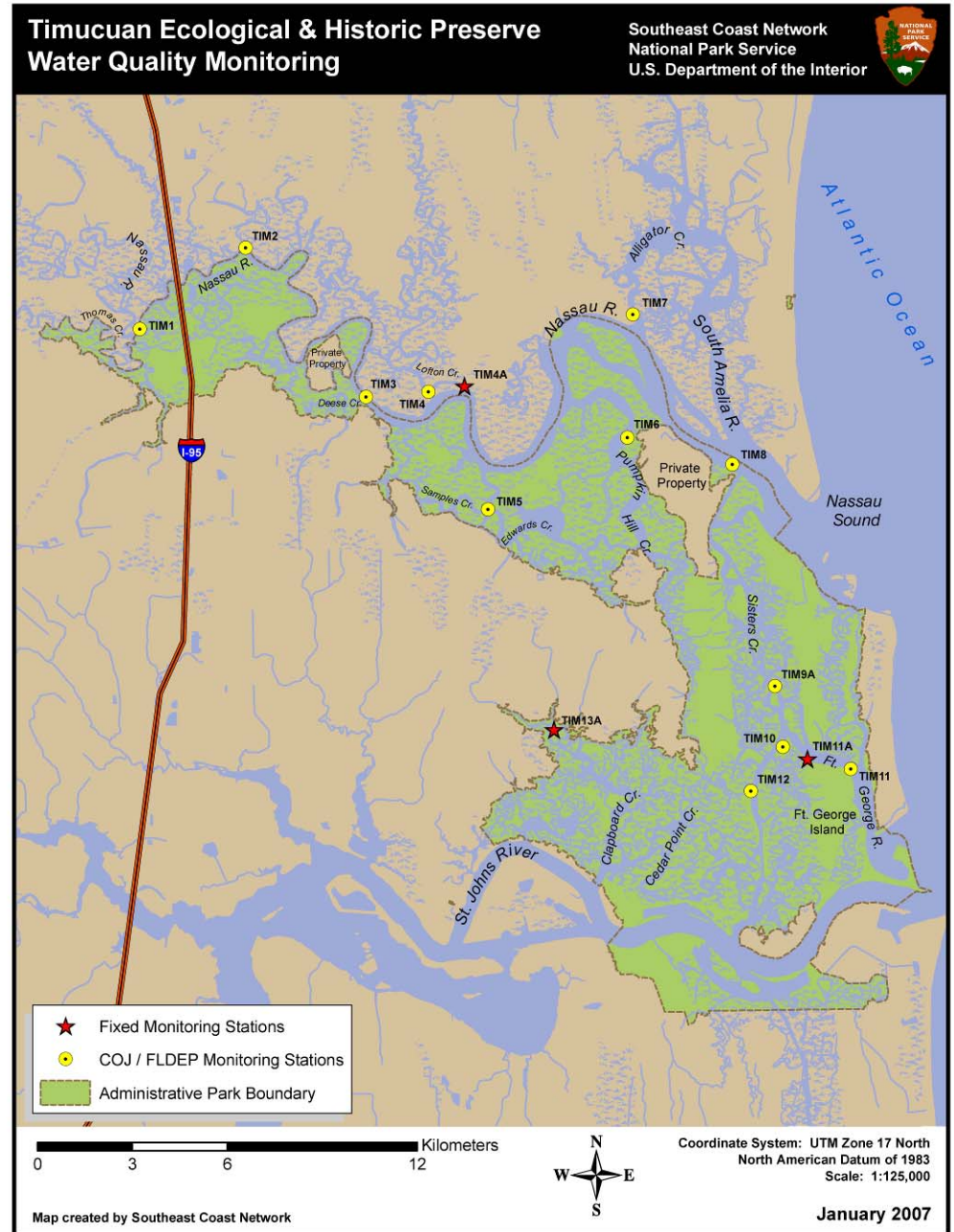
Lofton Creek July '05



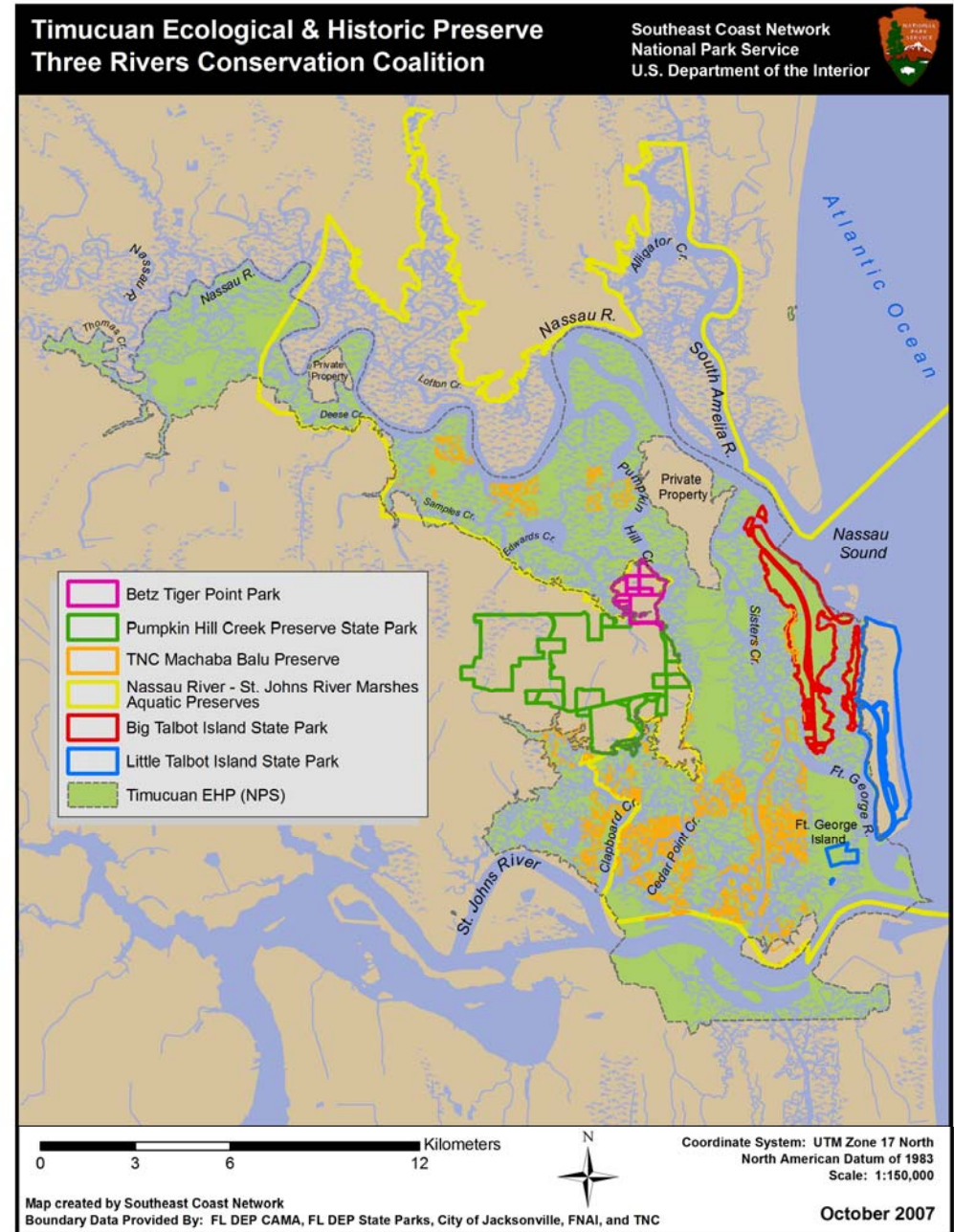
Timucuan Ecological and Historic Preserve

Bi-Monthly Water Quality Monitoring

- > 20 years of data
- pH, dissolved oxygen, temperature, salinity, turbidity, secchi depth, nutrients (TN, NO_3^- , NO_2^- , NH_4^+ , TP, OP) and chlorophyll *a* (2007)
- Trend - Increasing Nutrients



Organizations Working Together



Who it Takes to Pull This Off:

Overall - United States Environmental Protection Agency, NOAA Hollings Marine Laboratory, South Carolina DNR, South Carolina Sea Grant, National Estuarine Research Reserves, Chesapeake Biological Laboratories, GPL Laboratories, University of Georgia Marine Extension, NPS WRD

CAHA - National Estuarine Program, University of North Carolina

CALO - North Carolina National Estuarine Research Reserve, National Estuarine Program, University of North Carolina

FOPU - University of Georgia, Georgia DNR, National Estuarine Research Reserve, Skidaway Institute of Oceanography

CUIS - CUIS staff, University of Georgia, Georgia DNR, National Estuarine Research Reserve

TIMU - TIMU staff, Florida Department of Environmental Protection/Office of Coastal and Aquatic Managed Areas, City of Jacksonville, The Nature Conservancy, St. John River Water Management District, University of Florida

CANA - CANA staff/volunteers, Indian River Lagoon National Estuarine Program, Volusia County, St. John River Water Management District, The Nature Conservancy, Florida Department of Environmental Protection/Office of Coastal and Aquatic Managed Areas, DYNAMAC, USGS